

IN THE CLAIMS

The pending claims are reproduced herein for the Examiner's convenience:

1. (Original) A process comprising:
forming an imprinted polymer disposed upon a substrate under conditions to expose a bond pad on the substrate by local flow of the polymer, wherein a recess is formed in the polymer;
mating a solder bump with the bond pad; and
curing the polymer.
2. (Original) The process of claim 1, further including reflowing the solder bump at a process time selected from before curing the polymer, after curing the polymer, and simultaneously with curing the polymer.
3. (Original) The process of claim 1, following forming an imprinted polymer the process further including filling a solder flux into the recess.
4. (Original) The process of claim 1, following forming an imprinted polymer the process further including filling a solder flux into the recess by a process including pushing the solder flux.
5. (Original) The process of claim 1, wherein forming an imprinted polymer includes forming the imprinted polymer with a convex over-all profile.
6. (Original) The process of claim 1, wherein forming an imprinted polymer includes forming the imprinted polymer with a convex over-all profile, and the process further including:
mating a microprocessor with the solder bump.

7. (Original) The process of claim 1, wherein forming an imprinted polymer includes forming the imprinted polymer with a convex over-all profile, and the process further including:

mating a microprocessor with the solder bump, wherein mating includes at least partially flattening the convex over-all profile.

8. (Original) The process of claim 1, wherein forming an imprinted polymer includes forming a contoured recess.

9. (Original) The process of claim 1, wherein forming an imprinted polymer includes forming a contoured recess, and wherein mating the solder bump with the bond pad includes mating a complementary-contoured solder bump in the recess.

10. (Original) The process of claim 1, further including mating a microprocessor with the solder bump.

11. (Original) The process of claim 1, wherein the polymer is formed upon the substrate by depositing a prepolymer selected from a resin, an epoxy, and combinations thereof.

12. (Original) The process of claim 1, wherein curing the polymer forms a cured polymer film that includes a film-to-substrate thickness ratio in a range from about one-tenth to about one-half the thickness of the substrate.

13. (Original) The process of claim 1, wherein the polymer is formed upon the substrate by depositing a prepolymer selected from a resin, an epoxy, and combinations thereof, and wherein curing the polymer forms a cured polymer film including a film-to-substrate thickness ratio selected from about one-tenth, one-eighth, one-fifth, one-fourth, one-third, and one-half the thickness of the substrate.

14. (Original) The process of claim 1, wherein the polymer is a resin that includes a filler selected from silica, ceria, thoria, zirconia and combinations thereof.

15. (Original) The process of claim 1, wherein the polymer is a resin that includes a filler selected from silica, ceria, thoria, zirconia and combinations thereof, and wherein the filler is selected from a spherical particle, an aspherical particle, a fiber, and combinations thereof.

16. (Original) The process of claim 1, wherein the polymer is a resin that includes a filler in a concentration range from about 30% to about 90%.

17. (Original) A process comprising:
placing a polymer film over a substrate;
imprinting the polymer film under conditions to expose a bond pad on the substrate by local flow of the polymer film, wherein a recess is formed in the polymer film;
mating a solder bump with the bond pad; and
curing the polymer film.

18. (Original) The process of claim 17, further including reflowing the solder bump at a process time selected from before curing the polymer film, after curing the polymer film, and simultaneously with curing the polymer film.

19. (Original) The process of claim 17, following forming an imprinted polymer film the process further including filling a solder flux into the recess.

20. (Original) The process of claim 17, following forming an imprinted polymer film the process further including filling a solder flux into the recess by a process including pushing the solder flux.

21. (Original) The process of claim 17, wherein forming an imprinted polymer film includes forming a contoured recess.

22. (Original) The process of claim 17, wherein forming an imprinted polymer includes forming a contoured recess, and wherein mating the solder bump with the bond pad includes mating a complementary-contoured solder bump in the recess.

23. (Original) The process of claim 17, further including mating a microprocessor with the solder bump.

24. (Original) The process of claim 17, wherein placing the polymer film upon the substrate includes placing a polymer film selected from a resin, an epoxy, and combinations thereof.

25. (Original) The process of claim 17, wherein curing the polymer film forms a cured polymer film that includes a film-to-substrate thickness ratio in a range from about one-tenth to about one-half the thickness of the substrate.

26. (Original) The process of claim 17, wherein placing the polymer film upon the substrate includes placing a polymer film selected from a resin, an epoxy, and combinations thereof, and wherein curing the polymer film forms a cured polymer film including a film-to-substrate thickness ratio selected from about one-tenth, one-eighth, one-fifth, one-fourth, one-third, and one-half the thickness of the substrate.

Claims 27- 29. (Canceled)

30. (Previously Presented) A process comprising:
forming an imprinted polymer disposed upon a substrate under conditions to expose a bond pad on the substrate by local flow of the polymer, wherein a recess is formed in the polymer;

filling a solder flux into the recess;
mating a solder bump with the bond pad; and

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Page 6

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curing the polymer, wherein curing the polymer forms a cured polymer film that includes a film-to-substrate thickness ratio in a range from about one-tenth to about one-half the thickness of the substrate.

31. (Previously Presented) The process of claim 30, wherein forming an imprinted polymer includes forming the imprinted polymer with a convex over-all profile, and the process further including:

mating a microprocessor with the solder bump.

32. (Previously Presented) The process of claim 30, wherein forming an imprinted polymer includes forming a contoured recess.